

Rheumatoid Arthritis (RA)

Updated: Feb 07, 2020

Author: Howard R Smith, MD; Chief Editor: Herbert S Diamond, MD [more...](#)

OVERVIEW

Practice Essentials

Rheumatoid arthritis (RA) is a chronic systemic inflammatory disease whose hallmark feature is a persistent symmetric polyarthritis (synovitis) that affects the hands and feet (see the image below). Any joint lined by a synovial membrane may be involved, however, and extra-articular involvement of organs such as the skin, heart, lungs, and eyes can be significant. RA is theorized to develop when a genetically susceptible individual experiences an external trigger (eg, cigarette smoking, infection, or trauma) that triggers an autoimmune reaction.



Rheumatoid arthritis. Rheumatoid changes in the hand. Photograph by David Efron MD, FACEP.

See Rheumatoid Arthritis: In and Out of the Joint, a Critical Images slideshow, to help identify the distinguishing features of RA as well as the signs of extra-articular manifestations of this disfiguring disease.

Signs and symptoms of rheumatoid arthritis

In most patients with RA, onset is insidious, often beginning with fever, malaise, arthralgias, and weakness before progressing to joint inflammation and swelling.

Signs and symptoms of RA may include the following:

- Persistent symmetric polyarthritis (synovitis) of hands and feet (hallmark feature)
- Progressive articular deterioration

- Extra-articular involvement
- Difficulty performing activities of daily living (ADLs)
- Constitutional symptoms

The physical examination should address the following:

- Upper extremities (metacarpophalangeal joints, wrists, elbows, shoulders)
- Lower extremities (ankles, feet, knees, hips)
- Cervical spine

During the physical examination, it is important to assess the following:

- Stiffness
- Tenderness
- Pain on motion
- Swelling
- Deformity
- Limitation of motion
- Extra-articular manifestations
- Rheumatoid nodules

Guidelines for evaluation

- 2010 American College of Rheumatology (ACR)/European League Against Rheumatism (EULAR) classification criteria ^[1]
- 2012 ACR disease activity measures ^[2]
- 2011 ACR/EULAR definitions of remission ^[3]

See Presentation for more detail.

Diagnosis

No test results are pathognomonic; instead, the diagnosis is made by using a combination of clinical, laboratory, and imaging features. Potentially useful laboratory studies in suspected RA include the following:

- Erythrocyte sedimentation rate
- C-reactive protein level
- Complete blood count
- Rheumatoid factor assay
- Antinuclear antibody assay
- Anti-cyclic citrullinated peptide and anti-mutated citrullinated vimentin assays

Potentially useful imaging modalities include the following:

- Radiography (first choice): Hands, wrists, knees, feet, elbows, shoulders, hips, cervical spine, and other joints as indicated
- Magnetic resonance imaging: Primarily cervical spine
- Ultrasonography of joints: Joints, as well as tendon sheaths, changes and degree of vascularization of the synovial membrane, and even erosions

Joint aspiration and analysis of synovial fluid may be considered, including the following:

- Gram stain
- Cell count
- Culture
- Assessment of overall appearance

See Workup for more detail.

Management of rheumatoid arthritis

Nonpharmacologic, nonsurgical therapies include the following:

- Heat and cold therapies
- Orthotics and splints
- Therapeutic exercise
- Occupational therapy
- Adaptive equipment
- Joint-protection education
- Energy-conservation education

Guidelines for pharmacologic therapy

- 2015 American College of Rheumatology Guideline for the Treatment of Rheumatoid Arthritis [4]
- 2013 EULAR management guidelines [5]
- 2012 Agency for Healthcare Research and Quality (AHRQ) recommendations [6]

Nonbiologic disease-modifying antirheumatic drugs (DMARDs) include the following:

- Hydroxychloroquine
- Azathioprine
- Sulfasalazine
- Methotrexate
- Leflunomide
- Cyclosporine
- Gold salts
- D-penicillamine
- Minocycline

Biologic tumor necrosis factor (TNF)–inhibiting DMARDs include the following:

- Etanercept
- Infliximab
- Adalimumab
- Certolizumab
- Golimumab

Biologic non-TNF DMARDs include the following:

- Rituximab
- Anakinra
- Abatacept
- Tocilizumab
- Sarilumab
- Tofacitinib
- Baricitinib

- Upadacitinib

Other drugs used therapeutically include the following:

- Corticosteroids
- Nonsteroidal anti-inflammatory drugs (NSAIDs)
- Analgesics

Surgical treatments include the following:

- Synovectomy
- Tenosynovectomy
- Tendon realignment
- Reconstructive surgery or arthroplasty
- Arthrodesis

See Treatment and Medication for more detail.

 **medicine**
TOP PICKS FOR YOU
®